Remarks

Claims 1-19 are pending in the above-identified application. Claims 1, 7, 12 and 16 are amended, and claims 2, 4-6, 8-11, 13-15 and 17-19 are original, and claim 3 is cancelled.

The Examiner rejected claims 1, 2, and 4-19 under 35 U.S.C. 103(a) as being unpatentable over Allen, JR. et al. (US 2001/00 17861 A1), hereinafter referred to as Allen, in view of Breuckheimer et al. (US 6,496,508 B1), hereinafter referred to as Breuckheimer.

The Examiner rejected claim 3 under 35 U.S.C. 103(a) as being unpatentable over Allen (US 2001/0017861 A1) in view of Breuckheimer et al. (US 6,496,508 B1) in further view of Benedyk et al. (US 6,952,433 B1).

With this amendment Applicant has amended each of the independent claims to include the feature of original dependent claim 3, which is "<u>wherein a single broadband SS7 signaling gateway is used for multiple wireless access gateways</u>". Thus claim 3 has been cancelled.

MPEP §706.02(j) states:

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

MPEP §2143.01 states:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved, as a whole would have suggested to those of ordinary skill in the art. In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

Thus, to establish a prima facie case of obviousness, it must be demonstrate that all of the following elements: 1) suggestion or motivation, either in the references themselves or in the knowledge of one of ordinary skill in the art, to combine the reference teachings; 2) reasonable expectation of success found in the prior art; and 3) the prior art references (combined) must teach or suggest all of the claim limitations.

Allen, Jr. et al. discloses an Asynchronous Transfer Mode (ATM)-based distributed virtual tandem switching system in which a network of ATM-based devices is combined to create a distributed virtual tandem switch. The system includes an ATM switching network that dynamically sets up individual switched virtual connections. The system also includes a trunk interworking function (T-IWF) device and a centralized control and signaling interworking function (CS-IWF) device. The trunk interworking function device converts end office voice trunks from TDM channels to ATM cells by employing a structured circuit emulation service.

The centralized control and signaling interworking function device performs call control functions and interfaces narrowband signaling and broadband signaling for call processing and control within the ATM switching network. Consequently, the ATM based distributed virtual tandem switching system replaces a standard tandem switch in the PSTN.

Benedyk discloses a system and method that enables a more flexible architecture in communication networks with separated call control and bearer control. The invention enables full support of the advantages of a communication network with separated call control and bearer control when interfacing with a further network with monolithic signaling. The invention also increases the flexibility of an existing payload connection, especially in the case of a malfunction. The invention uses the existing signaling protocols to transfer further information. Basically, information elements and methods to interpret the transferred information are stored in the receivers and senders of the information. This enables the receivers and senders of information to transmit more information than originally planned when the protocols where designed. So it is possible to identify a combination of a payload transmission device and a control node instead of a single device only. It is further possible, to identify an assignment as a further assignment. This allows the change of a current assignment for a radio access controller.

Breuckheimer, et al. teach the following. To segregate functionality and to eliminate redundancy in service logic and associated hardware that together control the interconnection of narrowband trunk circuits (252-256) and broadband virtual channels (258-262) of a mixed node communication system (FIG. 5), a switch fabric (16) has an associated memory (280) that contains a pre-provisioned table of mappings between narrowband trunk circuits (DS-0s) and broadband virtual channel identities. Therefore, to establish an end-to-end connection, the switch

fabric (16) searches the pre-provisioned table (280) for an available connection and then performs the necessary cross-connection between the narrowband trunk circuit is (252-256) and the broadband virtual channel (258-262). The mappings principally relate to the narrowband-to-switch fabric interface and, as such, avoid the requirement for UNI signalling translation and negotiation, although the mappings may also include the broadband-to-switch fabric interface.

The following is repeated from the previous response.

Thus according to Allen, Jr. et al. end offices must have configuration changes in order to utilize the Allen, Jr. et al. invention. Since not each and every end office may have the required changes, it cannot conclude that Allen, Jr. et al. teaches that all resources of all media gateways in a "cluster" are available for a particular call, as is claimed for the present invention.

The second and third paragraphs of the Detailed Description of the present application states as follows:

"A general embodiment of the present method provides for distribution of control signaling related to the establishment, release and maintenance of AAL2 point-to-point connections across a series of ATM VCCs that carry AAL2 links. It allows for the concentration of signaling resources within a single media gateway by relieving the need for all media gateways to have an integrated broadband SS7 signaling gateway.

Thus, embodiments of the present system and method allow a single media gateway with an integrated broadband SS7 signaling gateway to be used as a single SS7 point code for more than one gateway of the cluster of media gateways. This allows for greater signaling efficiency and greater capacity. Also, all resources of all media gateways in a "cluster" are available for a particular call."

In Allen, Jr. et al. not all resources of all media gateways in the cluster are available for a particular call. In the present claimed invention all media gateways in the cluster being available for a particular call is a claimed feature of the present claims.

However, the Examiner admitted that Allen does not disclose using a single broadband SS7 signaling gateway for multiple wireless access gateways. The Examiner further stated that Allen discloses a centralized control and signaling interworking function device, which acts a single broadband SS7 signaling gateway (Referring to Figure 4, see paragraphs 0045 and 0046.). The Examiner then alleged that Benedyk teaches a method and system for routing messages in a radio access network, in which a Radio Access Network Gateway provides the signaling for multiple Radio Access Network Controllers (multiple wireless access gateways) (Referring to Figure 3, see paragraph 0023.) The Examiner then concluded that it would have been obvious to one of ordinary skill in the aft at the time of the invention to implement the Radio Access Network Controllers of Benedyk in the system of Allen, and that one of ordinary skill in the art at the time of the invention would have been motivated to do so in order to improve system access by extending service to wireless handsets for conventional SS7 and ATM-based network elements as taught by Benedyk (See paragraph 0023.)

Regarding the description of Figure 3 in Benedyk, the following is set forth:

"FIG. 3 shows an extract of an UMTS communication network including a media gateway MGW1, a mobile services switching centre MSC and a radio network controller RNC. The radio network controller RNC is in this case a terminating radio network controller RNC. As the network and the signaling in the network on both sides of the shown extract are not important for the invention are not explained. A payload connection is already through connected to an

incoming logical point Pi1 of the media gateway MGW1. The mobile services switching centre MSC is in charge of the call control after it received for example an initial address message. In a first step 1 the mobile services switching centre MSC orders the radio network controller RNC to page the subscriber. It receives a page response and does the call set-up and call confirmation. In a second step 2 resources in the media gateway MGW1 are ordered, granted and through connected via an intermediate logical point Pv1 to an outgoing logical point Po1. In a next step 3 the mobile services switching centre MSC orders the radio network controller RNC to assign the call. The radio network controller RNC requests and gets a connection establishment from the media gateway MGW1. Now the payload connection is set up from the incoming logical point Pi1 to the radio network controller RNC. In a next step 6 the radio network controller RNC sends an assignment response to the mobile services switching centre MSC.

The mobile services switching centre MSC starts a rerouting of the call. In this example because it receives an error message in a next step 7, this error message informs the mobile services switching centre MSC that the selected logical point Po1 has got a malfunction. The mobile services switching centre MSC requires and gets in a next step 8 from the media gateway a connection in the intermediate logical point Pv1 to a new resource. In next step 9 this resource Po12 is required, granted and through connected. The new payload connection is now through connected the outgoing logical point Po12. In a further step 10 the mobile services switching centre MSC sends a second assignment request to the radio network controller RNC. The radio network controller RNC recognizes that there is already an assignment for this call. This is recognized either by a call identification that is sent with the assignment message or, as in GSM networks, by the SCCP (Signaling Connection Control Part) connection this assignment is sent

through. If the second assignment requires different bearer capabilities than the first assignment, this is recognized because the second assignment has a different assignment type. Different bearer capabilities force the radio network controller RNC to release the existing connection to a user equipment and set up a new connection. The radio network controller RNC sends a second establish request and receives a second establish confirm in a next step 11. The radio network controller RNC replaces the current payload connection to the logical point Po1 of the media gateway MGW1 by the new payload connection to the logical point Po12 of the media gateway MGW2. In a next step 12 the radio network controller RNC sends a second assignment response to the mobile services switching center MSC."

This does not appear to support the Examiner's statement that Benedyk teaches a method and system for routing messages in a radio access network, in which a Radio Access Network Gateway provides the signaling for multiple Radio Access Network Controllers (multiple wireless access gateways).

The following is in regard to the latest office action.

The Examiner now alleges: "Breuckheimer teaches a communication system and architecture and method of establishing a communication connection, which comprises end-to-end connections between TDM and ATM systems via pre-provisioning. For example, a first connection map is generated that associates narrowband trunks and virtual circuit identities. Following the pre-provisioning of at least one through path connection at the network adaptor interface or the broadband interface, the connection broker is then in a position to receive a connection instruction from a call server. The connection broker can then route the connection request to the entity containing the appropriate service logic/hardware. Once a through path has

been identified the path is opened. The system can dynamically vary pre-provisioning within the

connection maps associated with the network adaptors and/or switch fabric, subject to additional

resources/ports becoming available (Referring to Figure 7, lines 22-45.) Essentially,

Breuckheimer extends the end-to-end connection process to include narrowband trunks, as

opposed to concentrating primarily on virtual channels. This effectively increases the number of

resources available to include all of the switches/gateways/network adaptors in network for a

particular call.

It would have been obvious to one of ordinary skill in the art at the time of the invention

to implement the dynamic pre-provisioning of Breuckheimer in the system of Allen."

Breuckheimer teaches interconnection and signalling requirements of a switch fabric

interface that couples a narrowband network to broadband functionality. Breuckheimer is

directed to a connection regime that effectively connects communication traffic on a trunk circuit

in the synchronous domain to a packetized data environment supported on virtual circuits of an

asynchronous domain.

The Examiner stated that Breuckheimer extends the end-to-end connection process to

include narrowband trunks, as opposed to concentrating primarily on virtual channels. The

Examiner then states that this effectively increases the number of resources available to include

all of the switches/gateways/network adaptors in network for a particular call. Since

Breuckheimer is directed to a method of communicating information between narrowband

circuits and broadband channel resources across an interface having a processor for controlling

connection there between and an associated memory, it cannot be assumed that Breuckheimer

discloses what Allen does not disclose, that is all resources of all media gateways in the cluster being available for a particular call.

The Examiner has not established a prima facie case of obviousness, in that the Examiner has not demonstrated that all of the following elements are present: 1) suggestion or motivation, either in the references themselves or in the knowledge of one of ordinary skill in the art, to combine the reference teachings; 2) reasonable expectation of success found in the prior art; and 3) the prior art references (combined) must teach or suggest all of the claim limitations.

The dependent claims include all the limitations of the respective independent claims upon which they depend and therefore are also allowable over the cited prior art.

Reconsideration and withdrawal of the rejections is therefore respectfully requested. In view of the above remarks, allowance of all claims pending is respectfully requested.

The prior art made of record and not relied upon is considered to be of general interest only. This application is believed to be in condition for allowance, and such action at an early date is earnestly solicited. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicant's attorney.

Respectfully submitted,
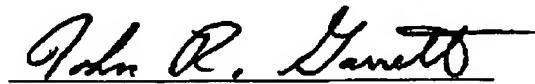
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